AMENDMENTS TO THE SPECIFICATION

Please amend paragraph **[0002]** under the heading "Related Applications" on page 1, as follows:

--**[0002]** This application claims priority to U.S. provisional application serial number 60/417,332, filed 09 October ~~2003~~2002 and hereby incorporated by reference.--

Please amend paragraph **[0017]** as follows:

--**[0017]** FIG. ~~1~~1A is a schematic diagram of one hybrid imaging system.--

Please add the following four paragraphs between existing paragraphs **[0017]** and **[0018]**:

--**[0017.1]** FIG. 1B shows a refractive element that is an example of an SDO element.

[0017.2] FIG. 1C shows a diffractive element that is an example of an SDO element.

[0017.3] FIG. 1D shows a single optical element that is an example of an SDO element.

[0017.4] FIG. 1E shows a single optical element that is an example of an SDO element.--

--**[0033]** The SDO element is configured within the optical imaging system so as to produce an intermediate image which, with the digital processing, results in a final image that is sharp and in focus for a particular object range while other object ranges differ from the in-focus image more than in the standard optical imaging system. In one embodiment, the SDO element is a specially designed phase plate. In another embodiment, the SDO element is a combination of optical components designed to affect the phase of light transmitted therethrough in a specific way. The SDO element may be a refractive element, diffractive element, or a combination of refractive and/or diffractive elements. The SDO element may be a stand-alone physical element or one or more optical surfaces. The SDO element may be disposed in the optical imaging system at a location between the object being imaged and the ~~final~~ image plane; a detector typically resides at the ~~final~~image plane to capture the intermediate image of the object. The SDO element may also be placed at or near to the aperture stop, or at or near to the image of the aperture stop, of the incoherent hybrid imaging system.--

Please amend paragraph **[0034]** as follows:

--**[0034]** FIG. ~~1~~1A shows one hybrid imaging system 10. Hybrid imaging system 10 includes a modified optical imaging system 12. Modified optical imaging system 12 has a lens 14 and a phase plate 16; phase plate 16 is positioned at the exit pupil of lens 14. Phase plate 16 is an example of an SDO element. Modified imaging system 12 accepts input light 20 from an object 11 and forms an output light 22 to form an intermediate image 24. Intermediate image 24 is then processed by a digital signal processor 30 to form a final image 34.--

Please add the following paragraph between existing paragraphs **[0034]** and **[0035]**:

--**[0034.1]** FIG. 1B shows a refractive element 26 that is an example of an SDO element. FIG. 1C shows a diffractive element 27 that is an example of an SDO element. FIG. 1D shows a single optical element 28 that is an example of an SDO element. Single optical element 28 has optical surfaces 29(1) and 29(2); either of surfaces 29(1) and 29(2) may be a diffractive surface, so that single optical element 28 may have one or both of refractive and diffractive qualities. FIG. 1E shows a single optical element 32 that is an example of an SDO element. Single optical element 32 has a reflective surface 33.--

Please amend paragraph **[0039]** as follows:

--**[0039]** The OTF of an incoherent optical system, as a function of defocus, can be shown as:

$$H(u,\psi) = \int_{-(1-u/2)}^{(1-u/2)} (P(x+u/2)e^{j(x+u/2)^2\psi})(P^*(x-u/2)e^{-j(x-u/2)^2\psi})dz, \qquad |u| \le 2 \tag{2}$$

where * denotes complex conjugate, and P(x) is the optical plate function:

$$P(x) = \begin{cases} e^{j\theta(x)}, & \text{for } |x| \le 1 \\ 0, & \text{otherwise} \end{cases} \tag{3}$$

where $j=\sqrt{-1}$ and $\theta(x)$ is some unspecified function. Since the magnitude of P(x) is unity, we are considering only phase plates that theoretically absorb no optical power. The defocus parameter ψ is given by:

$$\psi = \frac{\pi D^2}{4\lambda}\left(\frac{1}{f}-\frac{1}{d_o}-\frac{1}{d_i}\right)=\frac{2\pi}{\lambda}W_{20}=kW_{20} \tag{4}$$

where D is the diameter of the lens and λ is the wavelength of the light. The distance d_o is measured between object 11 and the first principal plane of lens 14, while d_i is the distance between the second principal plane of lens 14 and the image plane, at which intermediate image 24 is located. The quantity f is the focal length of lens 14. The wavenumber is given by k while the defocus aberration constant is given by W_{20}.--

Please amend the Abstract Of Disclosure as follows:

--An imaging system for imaging an object onto an image plane. An optical arrangement forms an intermediate image of the object at an intermediate plane with a first value of axial resolution. The imaging system also includes a digital processor configured to process the intermediate image to form a final image of the object~~ at the image plane~~. The imaging system further includes a specially designed optical element that cooperates with the optical arrangement and the digital processor to define a second value of axial resolution that is greater than the first value.--